

REMARKS/ARGUMENTS

Claims 1-38 are pending. By this Amendment, claims 1-3 and 24-26 are amended solely as formal matters, and claims 37-38 are added. Reconsideration in view of the above amendments and the following remarks is respectfully requested.

At the outset, Applicant respectfully requests that the finality of the Office Action be withdrawn as it has been made prematurely. In particular, the Office Action includes rejections under 35 U.S.C. § 112, second paragraph, based on the subject matter of claims 1 and 26 and their respective recitations of respiration activity vs. respiratory gas flow, and a breathing mask vs. breathing mask device. These rejections were presented for the first time in the Final Rejection, even though originally presented claims 1 and 26 included the same language. Thus, the rejection is based on the Examiner's further consideration of the claim phrases, not based on an amendment provided by Applicant. Accordingly, the finality of the rejection is improper and should be withdrawn. As such, entry of the attached amendments is requested as a matter of right. Moreover, the amendments presented herein are solely for the purposes of clarity.

Allowable Subject Matter

Applicant notes with appreciation the indication that claims 34-36 are allowed and the further indication that claims 9, 15, 16, 19, 20, 23, and 32 would be allowable if rewritten in independent form including all of the limitations of their respective base claims. Applicant has added independent claim 37, which incorporates the features of claims 9 and 15 (which such features being presented in the alternative).

Rejections under 35 U.S.C. § 112, Second Paragraph

Claim 1 stands rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which

Applicant regards as the invention. Claim 26 also stands rejected under 35 U.S.C. § 112, second paragraph, as allegedly omitting essential cooperative relationships of elements amounting to a gap between necessary structural connections. Without acquiescing to the propriety of these rejections, Applicant has amended claims 1 and 26 solely as formal matters. It is believed that the grounds for such rejections are now obviated. Thus, reconsideration and withdrawal of the rejections under Section 112, second paragraph, are respectfully requested.

Rejections under 35 U.S.C. §§ 102(b) and 103(a)

Claims 27-28 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Watson (U.S. Patent No. 4,777,962). This rejection is respectfully traversed for at least the following reasons.

Claim 27 recites, *inter alia*, “a signal processing device configured to generate, based on a variation in respiratory cycle-specific reference features obtained via differentiation, evaluation results indicative of whether or to what extent the measurement series contains sequences which are to be classified as a breathing disorder of obstructive or central origin.” Watson does not explicitly or inherently disclose this subject matter of claim 27. Thus, Watson fails to anticipate the invention of claim 27.

Watson is directed to techniques in which parameters are recorded during an apneic/hypopneic event and then are compared with empirically derived reference values to differentiate and distinguish apneic events from each other and from hypopneic events. The two parameters that Watson is concerned with are (1) Total Compartmental Displacement / Tidal Volume (TCD/VT), and (2) Phase Relation (PR). In Watson’s own words, “the invention relies upon [these] two parameters.” See col. 3, lines 53-60; see also Abstract. Furthermore, Watson criticizes other approaches in its “Background” section and even in its “Disclosure of the

Invention" section. Based on the "Detailed Description" of Watson -- especially the table inserted in col. 8 thereof -- there can be no doubt that the type of apnea is based on a consideration of TCD/VT and PR.

Watson indicates that TCD/VT is calculated during breathing by taking the derivative of the entire waveforms for the rib cage volume (RC), abdominal volume (AB), and the sum of tidal volume (SUM(VT)). However, this is not where the calculation ends. As Watson goes on to explain, the absolute values of the derivate signals are then integrated on a breath-by-breath basis. These integrated values are then summed up to arrive at the total compartmental displacement, and then divided by the sum of tidal volume. Thus, as best understood by Applicant, Watson teaches that:

$$TCD/VT = \frac{\int |RC| + \int |AB| + \int \sum VT}{\sum VT}$$

In marked contrast to the techniques described in Watson where a classification is based on TCD/VT and PR, the evaluation results of claim 27 -- which indicate whether or to what extent the measurement series contains sequences which are to be classified as a breathing disorder of obstructive or central origin -- are based on a variation in respiratory cycle-specific reference features obtained via differentiation. Watson actually is silent regarding the subject matter specifically recited in claim 27.

As noted above, Watson teaches a classification based on TCD/VT and PR. But just because Watson involves taking derivatives does not necessarily mean that it discloses generating evaluation results indicative of whether or to what extent the measurement series contains sequences which are to be classified as a breathing disorder of obstructive or central origin based on a variation in respiratory cycle-specific reference features obtained via

differentiation. Indeed, as shown in detail above, Watson's use of derivatives is only a preliminary or intermediate step that is required when determining TCD/VT -- which itself is only one variable used in Watson's classification scheme. In other words, Watson simply cannot arrive at a classification without performing many additional complicated mathematical operations following the taking of the derivatives of the entire waveforms for the rib cage volume (RC), abdominal volume (AB), and the sum of tidal volume (SUM(VT)) -- much less without also relying on Phase Relation (PR). Thus, even though one operation among numerous mathematical operations used to calculate one variable in Watson merely incidentally involves differentiation, such is not the same as providing "a signal processing device configured to generate, based on a variation in respiratory cycle-specific reference features obtained via differentiation, evaluation results indicative of whether or to what extent the measurement series contains sequences which are to be classified as a breathing disorder of obstructive or central origin," as recited in claim 27.

New claim 38, which depends from claim 27, further emphasizes this fundamental difference from Watson by emphasizing that the signal processing device is configured to generate the evaluation result based on the variation in respiratory cycle-specific reference features obtained directly via differentiation.

In view of above, Applicant respectfully submits that Watson does not teach each and every feature of claim 27 (or claim 28, which depends therefrom). Thus, reconsideration and withdrawal of this Section 102 rejection are respectfully requested.

Claims 1, 2, 8, 10-14, 24-26 and 31 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hoffman (U.S. Patent No. 6,287,264) in view of Watson, claim 18 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hoffman in view

of Watson and further in view of Berthon-Jones (U.S. Patent No. 6,092,665), and claims 3-6, 7, 17, 21, 22, and 29 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hoffman in view of Watson and further in view of Rapoport (U.S. Patent No. 5,335,654). These Section 103 rejections are respectfully traversed for at least the following reasons.

Similar to claim 27, claim 1 recites, *inter alia*, “differentiating the measurement signal to generate evaluation results indicative of the respiratory gas flow, the differentiating permitting classification between obstructive and central breathing disorders,” and claim 25 recites “a signal processing device configured to generate, based on a variation in respiratory cycle-specific reference features obtained via differentiation, an evaluation result which is indicative of whether or to what extent a prevailing or imminent breathing disorder is of obstructive or central origin.” For substantially the same reasons as those provided above with respect to claim 25, Watson does not teach or suggest this subject matter. As shown above, Watson simply cannot arrive at a classification without performing many additional complicated mathematical operations following the taking of the derivatives of the entire waveforms for the rib cage volume (RC), abdominal volume (AB), and the sum of tidal volume (SUM(VT)). Accordingly, even though one operation among numerous mathematical operations used to calculate one variable in Watson merely incidentally involves differentiation, such is not the same as “differentiating the measurement signal to generate evaluation results indicative of the respiratory gas flow, the differentiating permitting classification between obstructive and central breathing disorders” as recited in claim 1, or providing “a signal processing device configured to generate, based on a variation in respiratory cycle-specific reference features obtained via differentiation, an evaluation result which is indicative of whether or to what extent a prevailing or imminent

breathing disorder is of obstructive or central origin” as recited in claim 25. Thus, Watson fails to render obvious claims 1 and 25 (and their respective dependents).

Accordingly, reconsideration and withdrawal of these Section 103 rejections are respectfully requested.

Furthermore, Applicant notes that the Final Office Action incorrectly equates the “gradient” of claims 11 and 12 with a slope. Indeed, equating a gradient with a slope is an unreasonable construction of the former term, at least because they represent distinct mathematical concepts. Thus, while one of ordinary skill in the art would recognize that there are certain situations in which a gradient and a slope are related to one another, one certainly would recognize that the two are not the same -- with or without any “specific definition” that could have been provided in the instant specification. For at least this reason, any proposed construction that equates a gradient with a slope is unreasonable. Thus, even if Watson disclosed a slope (which, as shown above, it does not), it still fails to disclose the gradient of claims 11-12.

In addition to the features of claim 1, claims 13-14 call for performing trend analysis based on the nature and constitution of breathing drive. The Final Office Action states that “identification of central breathing disorders inherently displays analysis of the breathing drive’s constitution and nature.” However, even if true, this assertion has nothing to do with the trend analysis specifically called for in claims 13 and 14. Indeed, it is unclear how merely “display[ing] analysis of the breathing drive’s constitution and nature” even relates to trend analysis when the term is used properly. Moreover, inherency rejections are concerned with what must necessarily follow, and not mere possibilities or even probabilities of what may follow. A trend analysis need not necessarily follow from the alleged “identification of central

breathing disorders.” Thus, Applicant respectfully submits that the rejection of claims 13-14 on inherency grounds is improper and respectfully requests that it be withdrawn.

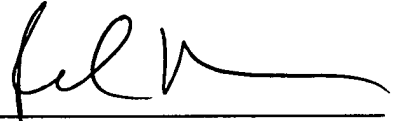
Conclusion

In view of the above amendments and remarks, Applicant respectfully submits that all the claims are patentable and that the entire application is in condition for allowance. Should the Examiner believe that anything further is desirable to place the application in better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number below.

Respectfully submitted,

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